ENVIRONMENTAL ASSESSMENT

AND

SECTION 404 EVALUATION

FOR

MAINTENANCE DREDGING

ISLE AU HAUT THOROUGHFARE

ISLE AU HAUT, MAINE

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
WALTHAM, MASS.

FEBRUARY 1979

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CONCLUSIONS

Based on my review of the information within this Environmental Assessment and in consideration of the general public need, I believe the project as described should proceed according to schedule. In my evaluation, the Assessment prepared in accordance with the National Environmental Policy Act of 1969 is an accurate document revealing that proper coordination with appropriate regulatory agencies has been conducted with subsequent minimization of environmental impacts insured based on the scheduling of the actual work and disposal site selection. The Assessment therefore precludes the need for preparation of a formal Environmental Impact Statement.

9 February 1979
(Date)

JOHN P. CHANDLER
Colonel, Corps of Engineers
Division Engineer

The Need for Project Maintenance

The Isle au Haut Thoroughfare provides the only access to Isle au Haut during severe winter weather. About 60 people live on Isle au Haut year round. Mail, medical care and other essential services are available only through the Thoroughfare during parts of the winter. Commercial vessels made about 1057 trips through the Thoroughfare in 1978 carrying mail, supplies, heavy freight and passengers. Commercial fishing vessels and transient yachts also use the Thoroughfare. Total tonnage carried through the Thoroughfare in 1978 was estimated to be in excess of 800 short tons.

The Proposed Project

The Federal Navigation project at Isle au Haut Thoroughfare, Isle au Haut, Maine provides for a channel 6 feet deep at Mean Low Water (MLW), 75 feet wide, and approximately 1200 feet long through a shoal at the easterly end of the waterway. The existing navigation project was authorized by the River and Harbor Act of 2 March 1945 and constructed in 1956 and 1958. No maintenance has been performed at the project site since construction was completed.

While strong local currents have kept the Federal channel relatively free from shoaling and sedimentation, boulders which are present in the channel, ranging in size from 6 inches to greater than half a cubic yard, pose a threat to navigation safety. A reconnaissance SCUBA survey has identified approximately 260 boulders. The proposed maintenance dredging will remove these boulders by bucket dredge. Some unconsolidated bottom sediments that surround individual boulders will also be picked up in the course of dredging.

A small ledge area, estimated to be less than 25 cubic yards in size, will be cleared by blasting and removed with other dredged material. It is estimated that only one or two blasts will be needed to remove the ledge area. Blasting will be done at high tide.

All dredged material, estimated to total approximately 1,000 c.y., will be removed by scow to the proposed disposal site which is located north of Flake Island. Dredged material will be dumped adjacent to a ledge area which is roughly on a line between can buoy 2 and the BW beacon north of Flake Island. The material will be dumped from a stationary scow at approximately the 35 foot contour line at MLW in an effort to create mounds or piles of material, not exceeding a height of 15 feet (MLW). This site was selected in coordination with the State of Maine Department of Marine Resources for its potential to create additional lobster habitat by extending the adjacent ledge area. Other factors influencing the choice of the proposed disposal site are that the site is located outside navigation routes and is not used by scallopers or trawl fishermen.

Alternatives to the Proposed Project

Dredging Alternative

The only alternatives to maintenance dredging of the Isle au Haut Channel would be the no-action alternative or development of a new harbor which could be used in all weather conditions. The "no action" alternative would result in periodic disruption of regular mail runs to the island. During certain times of the year essential services, such as medical attention, might not be readily available with no action alternative. Situations involving loss of life could conceivably occur if maintenance dredging was not implemented. Loss of revenue because shellfish could not be transported to the mainland and generalized inconvenience to residents of the island would also be impacts associated with the "no action" alternative.

Development of a new harbor as an alternative to maintenance dredging would require investment in new docking facilities and access roads. Development of new harbor facilities could involve dredging and blasting because of the rocky nature of the area. Adverse environmental impacts associated with construction of new docking facilities, access roads and possible dredging and blasting are proportionally greater than those associated with the proposed project. This alternative is also inconsistent with the Corps' responsibility to maintain Federally authorized projects.

Disposal Site Alternatives

Considerations related to selection of the proposed site included avoiding established navigation routes and areas used by scallopers and trawl fishermen.

Alternative disposal sites were available upland and in very deep water. Dredged material could have been deposited on the shore of the thoroughfare and reused by local interests for construction of a lobster pound. This alternative would have created a localized economic gain; however, potential environmental benefits would have been limited. The deep water disposal alternative would have involved dumping dredged material from a moving scow in water deeper than 100 feet. Economic and environmental impacts, both beneficial and adverse, would be minimal if this alternative were implemented.

Historical-Archaeological Resources

In compliance with the Corps' responsibilities under the National Historic Preservation Act of 1966 (Public Law 89-665) and Executive Order 11593, potential project impacts upon cultural resources were examined.

As the area to be dredged has been disturbed by previous dredging to the proposed project depth and width, no cultural resources which may have been present are expected to have survived intact.

The proposed disposal site is outside of navigation channels and fishing grounds and is hard bottom with no recorded shipwrecks. Coordination is underway with the Maine State Historic Preservation Officer to confirm absence of cultural resources in the area. Should any such resources be present, appropriate assessment and mitigative action will be undertaken if necessary.

General Biology of the Project Area

Federal Channel

The Thoroughfare itself supports a diverse healthy biological community. A recent SCUBA survey showed an absence of commercially important species, except for two juvenile lobsters. Finfish encountered during the dives included rock eel or gunnel (Pholis gunnellus), sea raven (Hemitripterus americanus), lumpfish (Cyclopterus lumpus), sea snail (Neoliparis atlanticus) and grubby sculpin (Myoxocephalus aeneus).

Common invertebrates readily identifiable were cancer crabs (Cancer irroratus), northern sea cucumber (Cucumeria frondisa), hermit crab (Pagurus), sea urchins (Stronglocintrotus drobacensis), starfish (Asterias vulgaris), sea peach (Tethyum), sea anemone (Metridum), blue mussel (Mytilus), horse mussel (Modiolus), periwinkle (Littorinu littorea), sand shrimp (Crangon), barnacks (Belanus balanoides), yellow sponge, Hyas or toad crabs, and another unidentified species of shrimp.

The waterfowl population of the area is composed mostly of migrants. Eider ducks are the predominant species while goldeneye and scoter are common. Black guillemot are the most numerous of the pelagic birds found throughout the area. A variety of migratory shorebirds are found in or near the channel while the inland area of the island is dominated by wood warblers. An active osprey nest is located on a day navigation spindle which marks the southern entrance to the Thoroughfare. The nest site is approximately 2/3 of a mile southwest of the project area. It is expected that the same breeding pair will return to the nest again this year to raise their young. Nesting activities should begin around 15 May with hatching occurring during mid-June. The critical period for insuring successful nesting and hatching appears to begin around 1 May and lasts until hatching. Any major disturbances during this period may result in unsuccessful reproduction or abandonment of the nest during incubation.

Disposal Site

The sediments at the proposed disposal site, which is located roughly on a line between can buoy 2 and the BW beacon north of Flake Island at about the 35 foot contour line, are hard compacted mud and clay. This type of substrate is expected to support turbellarians, small crustaceans, echinoderms and bivalves. This disposal site is located adjacent to a ledge area where lobster (Homarus americanus) are found during warmer weather (June through October). Disposal operations will be scheduled to avoid disruption to the lobster population.

Probable Impacts

Dredging

Grab sediment samples were collected in January 1979 at 3 selected stations within the Federal channel. Sediments of the channel are predominantly shell, cobbles and bedrock outcrops. Grain sizes were not determined because over 95 percent of the material was found to be cobble size (3 inches) or larger. No physical or chemical analysis of sediments was possible because of the nature and size of the material. These unconsolidated sediments represent only 10 to 20 percent of the material to be dredged while 80 to 90 percent of dredged material will be boulders.

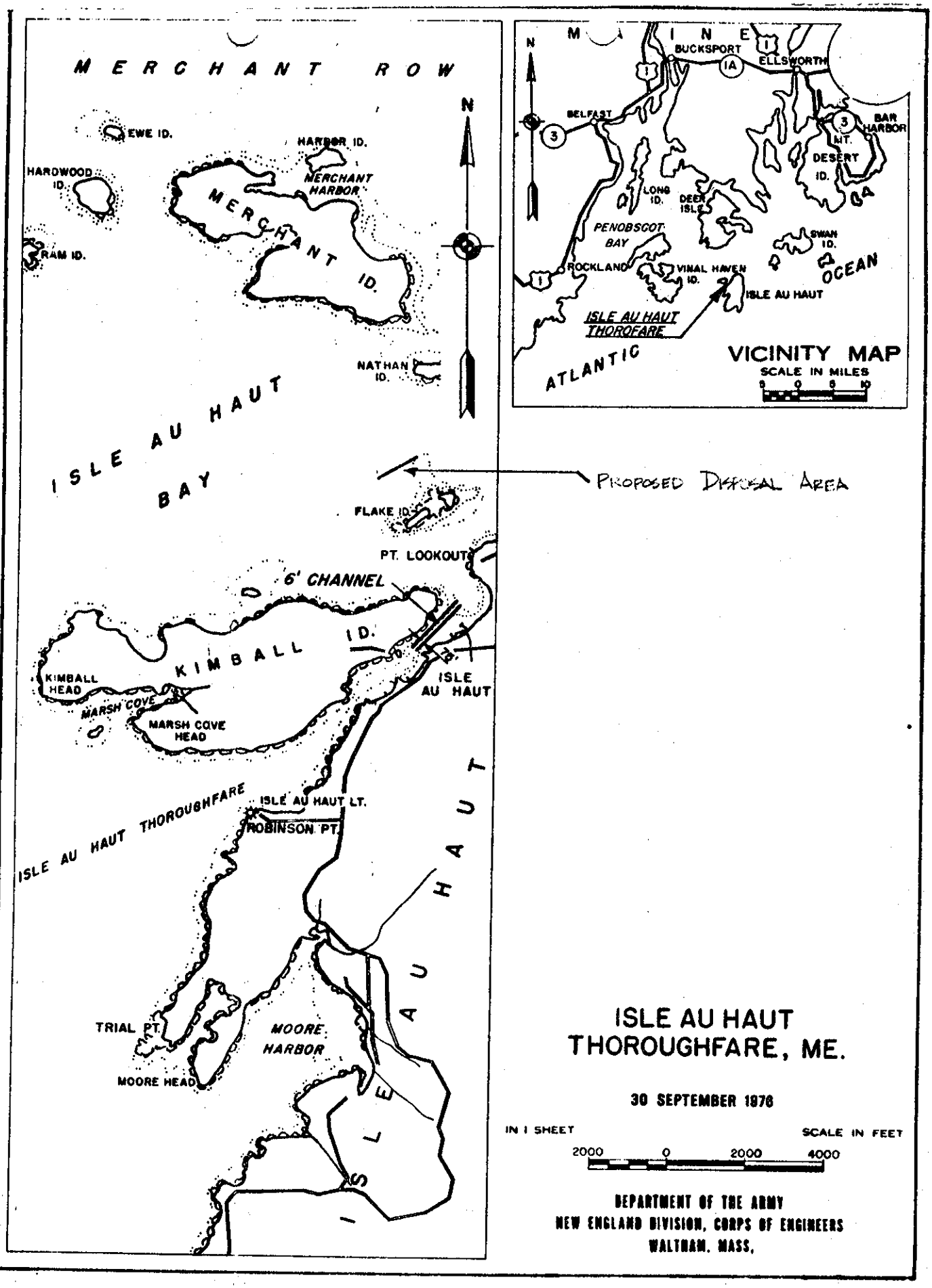
Impacts associated with dredging will include temporarily increased turbidity and reduction in light transmission which may destroy nektonic and planktonic organisms. Any benthic organisms living on or in the boulders and sediments to be removed will be destroyed. No release of potentially toxic substances (oil, grease, and heavy metals) is expected from the dredged material since the material is predominantly shell, cobbles and boulders. Aesthetic values will be somewhat reduced during dredging activities.

Removal of a small ledge area will be accomplished by jetted blasting. It is estimated that only one or two detonations will be required to clear the ledge. Some finfish mortalities may occur if the energy wave passed on to the waters surrounding the ledge falls within the range of 40 to 70 pounds per square inch (psi). It is expected that the magnitude of jetted blasts at Isle au Haut will not be sufficient to cause significant mortalities to finfish. Attempts will be made to clear the area of finfish before blasting. Blasting will be done at high tide when the ledge area is covered by 12 to 14 feet of water. This will insure reduced noise levels that should not disturbe local residents or the osprey nest.

Some minor inconvenience to daily channel traffic may occur as a result of dredging and blasting.

Disposal

Disposal of material will result in temporarily increased turbidity, suspension of some fine grain materials in the water column and possibly reduced aesthetics. Benthic organisms inhabiting the hard mud floor at the site will be buried under the mounded rock and associated sediments. Repopulation of the disposal site is expected to commence shortly after disposal activities cease. It is hoped that species numbers and diversity will increase at the disposal site by extending the adjacent ledge area with the mounded boulders and sediments. At present the ledge area supports a commercially valuable lobster population. This site was selected through coordination with the State of Maine Department of Marine Resources for its potential to create additional lobster habitat.



ISLE AU HAUT THOROUGHFARE, ME.

30 SEPTEMBER 1976

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DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
WALTHAM, MASS.

SECTION 404 EVALUATION

FOR

ISLE AU HAUT THOROUGHFARE MAINTENANCE DREDGING

ISLE AU HAUT, MAINE

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
WALTHAM, MASSACHUSETTS

Section 404 Evaluation
Maintenance for Dredging, Isle au Haut Thououghfare
Isle au Haut, Maine

1. References.

a. Section 404(b) of Public Law 92-500, Federal Water Pollution Control Act of 1972, amended.

b. 40 CFR 230.4 - 230.5 dated 5 September 1975.

c. EC 1105-2-90 dated 10 October 1978.

2. The Proposed Plan.

The recommended plan calls for removal of approximately 1000 c.y. of material, primarily composed of boulders. A small ledge area, estimated to be less than 25 c.y., will also be cleared by blasting. Blasting is expected to be minimal with only one or two detonations needed to remove the ledge area. All material will be removed by a bucket dredge.

The proposed disposal site is located adjacent to a ledge area lying north of Flake Island. Material will be dumped from a stationary scow to create piles of material. This may provide additional habitat for lobster found in the ledge area.

3. Project Authorization and Status.

The Isle au Haut Thoroughfare Federal Navigation Project was authorized by the River and Harbor Act of 2 March 1945. The project was constructed in 1956 and 1958. No maintenance dredging has been performed at the project since construction was completed.

4. Environmental Concerns.

In view of the fact that the proposed project is designed to remove navigation hazards in the Isle au Haut Thoroughfare and that the dredged material will be used to enhance lobster productivity by providing additional habitat, the project is considered a minor action with no unacceptable environmental impacts.

5. Technical Evaluations.

A technical evaluation with respect to disposal of dredged material and potential environmental impacts resulting from such action has been made. The results are presented subsequent to the following conclusions. Concomitant reading of or adequate familiarity with Section 404 (b) Guidelines will insure understanding of results presented in the technical evaluation.

6. Conclusions.

Determinations

(a) An ecological evaluation has been made following the evaluation guidance in 40 CFR 230.4 in conjunction with the evaluation considerations in 40 CFR 230.5.

(b) Appropriate measures have been identified and incorporated in the proposed plan to minimize adverse effects on the aquatic environment as a result of the discharge.

(c) Consideration has been given to the need of the proposed activity, the availability of alternate sites and methods of disposal that are less damaging to the environment, and such water quality standards as are appropriate and applicable by law.

(d) Disposal of material that is primarily boulders and ledge should not result in any adverse impacts to the equatic ecosystem and may help enhance lobster productivity by creating additional habitat.

Findings.

The discharge site for maintenance dredged in the Isle au Haut Federal Navigation Channel has been specified through the application of Section 404(b)(1) Guidelines.

The project files and Federal regulations were reviewed to properly evaluate the objectives of Section 404(b) of Public Law 95-500. A public notice on the Section 404 Evaluation has been issued (19 January 1979). Public views are being solicited and will be incorporated where applicable.

9 February 1979
Date

JOHN P. CHANDLER
Colonel, Corps of Engineers
Division Engineer

230.4-1 Physical and Chemical - Biological Interactive Effects

(a) Physical Effects (1 through 3)

(1) Wetlands

Not applicable. There are no wetlands in or near the project area.

(2) Water Column

Both dredging and disposal operations will result in a temporary reduction in light transmission and aesthetic values, increased turbidity and some destruction to nektonic and planktonic organisms. These effects should be temporary, lasting only as long as dredge/disposal operations continue.

(3) Benthos

The proposed disposal site is a hard compact mud-clay surface adjacent to a ledge. The area is expected to support a community predominantly composed of turbellarians, bivalves, echinoderms and small crustaceans. Lobster are known to inhabit the adjacent ledge area during warm weather periods.

Any organisms residing at the disposal site may be destroyed by disposal operations. Recolonization should begin shortly after disposal operations cease. It is hoped that disposal of boulders will enhance lobster productivity by providing additional habitat.

(b) Chemical - Biological Interactive Effect (1 through 3)

(1) Dredge material has been excluded from the evaluation procedure specified in paragraphs (b)(2) and (3) of this section since one of the conditions specified in (b) (1) (i)(ii) and (iii) of this section has been determined to exist.

(i) Dredge material is composed predominantly of gravel, cobble and other naturally occurring sedimentary material with a particle size larger than silt.

(ii) Not applicable. Dredged material will not be used for beach nourishment or restoration.

(iii)

(a) The material proposed for discharge is not substantially the same as the substrate at the disposal site. Dredged material is predominantly boulders with some unconsoliated sediments, mostly cobble size (3 inches) or larger while the proposed disposal site is hard, compact mud-clay.

(b) The site from which the material proposed for discharge is to be taken is sufficiently removed from sources of pollution to provide reasonable assurance that such material has not been contaminated by such pollution.

(c) The nature of the dredged material itself (boulders and cobble) should provide assurance that dredged material will not be moved by currents or otherwise in a manner that is damaging to the environment outside the disposl site.

(c) Procedure for Comparison of Sites

(1) Total sediment analysis on dredge material has not been done. Visual analysis of sediment samples taken from the Thoroughfare show unconsolidated sediments to be shell, shell fragments and other material cobble size (3 inches) or larger.

(2) Analysis of the biological community is deemed unnecessary. The intent of the proposed disposal is to provide addition lobster habitat with dredge material by extending a ledge area, adjacent to the disposal site, which is known to support a commercially valuable lobster population. The disposal site which has a hard compact mud-clay substrate is expected to support turbellarians and some bivalves, echinoderms and small crustaceans.

230.4-2 Water Quality Considerations

The disposal of dredged material will not violate appropriate and legally applicable water standards.

230.5 Selection of Disposal Sites and Conditioning of Discharges of Dredged Material.

(a) General Considerations and Objectives

Consideration has been given to the need for the proposed project, the availability of alternate sites, methods of disposal that are less damaging to the environment and such water quality standards as are appropriate and applicable by law. The following objectives have been considered. (1 through 8)

(1) Discharge activities will not significantly disrupt the chemical, physical or biological integrity of the aquatic ecosystem.

(2) Discharge activities will not significantly disrupt the food chain so as to result in decreased divesity or alteration to plant and animal species.

(3) Discharge activities should not inhibit fauna movement. Disposal of rock at this site is intended to provide additional feeding, spawning, breeding and nursery area for lobster.

(4) Not applicable. There are no wetlands in or near the project area.

(5) Discharge activities will not isolate areas that serve the function of retaining natural high waters or flood waters.

(6) Some increase in turbidity levels are expected as a result of the proposed discharge. However this should be temporary, lasting only as long as disposal activities continue.

(7) Discharge activities should not significantly degrade aesthetic or recreational values. Economic values are expected to increase as a result of providing additional lobster habitat.

(8) Degradation of water quality will be avoided through application of Sections 230.4, 230.5(c) and (d).

(b) Considerations Relating to Degradation of Water Uses at Proposed Disposal Site (1 through 10)

(1) Municipal Water Supply Intakes

There are no public water supply intakes in or near the project area.

(2) Shellfish.

(i) There is no significant bivalve community at the proposed disposal site. A ledge area adjacent to the disposal site supports a significant crustacean community,in particular, lobsters and crabs. Disposal of rock is intended to enhance lobster productivity by providing additional habitat.

(ii) Dredge material is predominantly boulders and cobbles and will not release pollutants that may be carried by currents or wave action into productive shellfish beds.

(iii) The mound of rocks formed by disposal of dredge material should not result in changes of current patterns, salinity patterns or flushing rates that may affect shellfish.

(iv) Disposal operations will be scheduled to avoid interference with reproductive processes and avoid undue stress to juvenile forms of shellfish. The Corps of Engineers will comply with the request from the State of Maine Department of Marine Resources that no dredging or disposal occur between 1 June and 1 October because of the presence of lobster in shallower waters during warm weather periods.

(3) Fisheries

(1) Disposal activities will not cause significant disruption to fish spawning or nursery areas.

(ii) Dredging and disposal activities will be scheduled to avoid interference with fish spawning cycles and to minimize interference with migration patterns and routes.

(iii) Not applicable. There is no significant submersed or emergent vegetation in or near the project area.

(4) Wildlife

Use of the proposed disposal site will have minimal impact on food chains or community structure of wildlife and marine or aquatic sanctuaries. It is hoped that dredged material will provide suitable habitat for lobster thus increasing productivity of this commercially important species.

(5) Recreational Activities

(i) Reasonable methods will be employed to minimize any increase in amount and duration of turbidity which might reduce the numbers and diversity of fish or cause a significant aesthetically displeasing change in the color, taste or odor of the water.

(ii) Dredge materials will not release nutrients that might result in eutrophication, the degradation of aesthetic values or impairment of recreational uses.

(iii) Dredge material is free from unacceptable levels of pathogenic organisms.

(iv) Dredge material does not contain oil and grease in harmful quantities as defined in 40 CFR 110.

(6) Threatened and Endangered Species.

No known threatened or endangered species inhabit the project area. An active osprey nest is located aproximately 2/3 of a mile south of the Federal channel, at the southern entrance to the Isle au Haut Thoroughfare. No dredging will be done in or near the immediate vicinity of this nest. Blasting will be done at high tide, insuring reduced noise levels that may not even be discernable at that distance. Disposal scows will not use the southern entrance to the Thoroughfare when transitting to or from the disposal site. It is felt that the proposed project will neither disturb nor interfere with these osprey in any way which might jeopardize their continued existance at Isle au Haut.

(7) Benthic Life

Any benthos inhabiting the disposl site may be destroyed by burial. Repopulation by the same community should commence shortly after disposal activities cease. Lobster productivty may increase.

(8) Wetlands

Not applicable. There are no significant wetlands in or near the project area.

(9) Submersed Vegetation

Not applicable. There is no significant submersed vegetation in or near the project area.

(10) Size of Disposal Site

The proposed disposal site will receive dredged material in such a manner as to create mounds of material, not exceeding a height of 15 feet M.L.W., and extend the adjacent ledge area which runs roughly on a line between can buoy 2 and the BW beacon north of Flake Island. Disposal activities will continue in this way until all dredged material (estimated to be approximately 1,000 c.y.) is discharged.

(c) Other considerations (1 through 7)

(1) Appropriate scientific literature was reviewed in preparation of this report.

(2) Alternatives to open water disposal are feasible but it is felt that use of the proposed disposal site will not result in significant adverse impacts to the marine ecosystem but rather enhance productivity within the marine environment.

(3) The proposed disposal site is a hard, mud bottom which will support the piles of rocks removed from the channel.

(4) Disposal seaward of the baseline of the territorial seas is both economically and environmentally unjustifiable.

(5) Dredge material is predominantly rock with some clean unconsolidated material that will not require covering with other material.

(6) Not applicable. The proposed project does not involve use of any confined areas.

(7) Because of the small project size, the nature of the dredge material and the intent to create additional lobster habitat, it is felt that monitoring is unnecessary.

(d) Contaminated Fill Material Restrictions

Not Applicable. The proposed project does not involve discharge of fill material.

(e) Mixing Zone Determination

The material proposed for discharge is 80% to 90% boulders. The remaining 10%-20% is unconsolidated sediments of which over 95% are cobble size (3 inches) or larger. The composition of the dredge material itself should insure rapid decent to the bottom with little if any turbidity or release of constituents to the surrounding waters.